SAFE HARBOR AGREEMENT BETWEEN PACIFIC GAS AND ELECTRIC COMPANY AND THE U.S. FISH AND WILDLIFE SERVICE FOR INTERIOR DUNE SPECIES LOCATED ON ANTIOCH DUNES IN CONTRA COSTA COUNTY, CALIFORNIA

1. INTRODUCTION

This Antioch Dunes Safe Harbor Agreement ("Agreement") is between Pacific Gas & Electric Company ("PG&E") and the U.S. Fish and Wildlife Service ("Service"), hereinafter referred to as the "Parties". This Agreement is effective and binding on the date of the last signature of either Party below. This Agreement follows the Service's Safe Harbor Agreement policy (FR 64:3271) and regulations (FR 64:32706), which implement this policy. In addition, this Agreement will provide a net conservation benefit for Interior Dune endemic species and provides certain regulatory assurances to PG&E in such habitat creation and enhancement.

This Agreement covers the Lange's metalmark butterfly (*Apodemia mormo langei*), listed as endangered under the federal Endangered Species Act ("Act"). This species is considered the "covered species" as defined in the Service's final Safe Harbor Policy (*Federal Register* 64:32717). By definition, the Service limits "covered species" to federally listed endangered or threatened species that are the subject of a Safe Harbor Agreement. This Agreement also covers the federally endangered Antioch Dunes evening primrose (*Oenothera deltoids* ssp. *howellii*) and the federally endangered Contra Costa wallflower (*Erysimum capitatum* var. *angustatum*).

This Agreement may also benefit several other special-status species that can co-occur permanently or seasonally in interior dune habitats.

2. AUTHORITY AND PURPOSE

Sections 2, 7, and 10 of the Endangered Species Act of 1973, as amended, allow the Service to enter into this Agreement. Section 2 of the Act states that encouraging interested parties, through Federal financial assistance and a system of incentives, to develop and maintain conservation programs is key to safeguarding the Nation's biological resources. Section 7 of the Act requires the Service to review programs that it administers and to utilize such programs in furtherance of the purposes of the Act. By entering into this Agreement, the Service is utilizing its Endangered Species and related programs to further the conservation of the Nation's fish and wildlife resources.

Section 10(a)(1)(A) of the Act authorizes the Service to issue enhancement of survival permits for listed species. It is the intent of the Parties to follow the procedural and substantive requirements of section 10(a)(1)(A) of the Act. Section 10(d) provides that the Service may grant permits authorizing the take of listed species under section 10(a)(1)(A) only if it finds that they "(1) were applied for in good faith, (2) if granted and exercised will not operate to the disadvantage of such endangered species, and (3) will be

consistent with the purposes and policy set forth in section 1531 of this Act." This Agreement satisfies all three conditions set under section 10(d) of the Act. This Permit has been applied for in good faith. If granted, it is expected to operate to the advantage of the covered species by restoring available habitat on PG&E's parcels, by creating opportunities for population recolonization and expansion, by maintaining suitable habitat over the long-term, and by conserving rare populations of species that are endemic to the San Francisco Bay Area that are declining in response to widespread habitat loss and other factors. This Agreement and Permit are consistent with the purposes and policies of the Act, because they are expected to provide a net conservation benefit for the covered species in a manner consistent with the recommendations and strategies contained in the U.S. Fish and Wildlife Service *Antioch Dunes National Wildlife Refuge Comprehensive Conservation Plan* (USFWS August 2002)

The purpose of this Agreement is for the Parties to collaborate and implement conservation measures for the covered species. This will be accomplished by restoring and maintaining suitable habitat on the enrolled property. Restoration actions will primarily involve controlling invasive plant species. PG&E will receive a Permit that authorizes implementation of the conservation actions and other provisions of this Agreement and authorizes incidental take of the covered species provided PG&E's baseline responsibilities, as defined in this Agreement, are met.

3. 0 DESCRIPTION OF COVERED SPECIES

3.1 Lange's Metalmark Butterfly

Description

Lange's metalmark butterfly ("Lange's") is a fragile, brightly colored butterfly in the Riodinidae family. Adult wingspan varies from 1 to 1.5 inches. Dorsal wings are largely black with white spots. Red-orange coloration extends through the inner forward half of the forewing, the hindwing bases, and a small central patch subtended by black. Below, the wings have a more muted pattern of gray, white, black and orange.

Distribution

The Lange's was first discovered in 1933 and was described five years later. In June 1976, this local subspecies was one of the first eight insects to be listed as endangered under the Federal Endangered Species Act. Following the listing, the Lange's remnant habitat was purchased by the Service and designated a Refuge, with their populations concentrated in the 1992 and 1993 Dunes at the Sardis Unit, and the Blowout MA and 1995 Dunes at the Stamm Unit. The Refuge and the PG&E parcels, in addition to a portion of the adjacent Kemwater property provides about 70 acres of suitable habitat and constitutes the entire present range for the Lange's.

Population Dynamics

Prior to 1985, population estimates for the Lange's were obtained from mark and recapture methods used by R.A. Arnold (1983a). From 1977 to 1983, Arnold documented a decline from more than 2,000 individuals to fewer than 400 reproducing individuals (effective adult population number) (Arnold 1983a). Arnold concluded that the Lange's population decline was linearly correlated with the loss and alteration of habitat. Also, a trend analysis suggested that if then current habitat conditions continued, the extinction of the Lange's at the Sardis and Stamm Units, the PG&E parcels, the Georgia Pacific gypsum plant, and Kemwater property, could have occurred within one to five years (Arnold 1983a). Then, in 1985, Arnold documented a Lange's population increase at both the Sardis and Stamm Units, 1.6 times greater and 2.2 times greater, respectively, than in 1984. The Service uses the number of 336 as a viable, self-sustaining population size for the Lange's metalmark butterfly.

According to the Conservation Strategy, the Refuge's current methodology counts Lange's once a week during their flight period (August to September) and uses the highest count during those surveys as the year's peak count. The peak counts of the adult butterflies are used as an annual index of the relative size of the population. The highest peak count was in 1999, with more than 2,343 Lange's counted. Arnold's peak count could be as much as five to ten times the Refuge's weekly peak count. The different sampling methods cannot be directly compared.

Habitat

Lange's was historically restricted to sand dunes along the lower reaches of the San Joaquin River just above its confluence with the Sacramento River. The species is currently restricted to interior dune habitat at Antioch in Contra Costa County. These dunes were deposited by winds reworking glacial outwash from the Pleistocene Sierra Nevada. Most of the suitable habitat for this species is now part of the Antioch Dunes National Wildlife Refuge.

Life History

Lange's is completely dependent upon its larval food plant, the naked-stemmed buckwheat (*Eriogonum nudum* ssp. *auriculatum*),to complete its life cycle and produces one brood per season. Adults typically begin to emerge in late July or early August, and can be observed until mid-September. Numbers typically peak two or three weeks following the earliest emergence of a butterfly from a pupal case. The peak in male emergence is generally earlier than that of females (Powell and Parker 1993). They live for approximately one week during which they feed, mate and locate the host buckwheat on which to deposit their eggs.

Female Lange's lay eggs throughout the adult flight period. The gray eggs are deposited, in clusters of two or four, on the stem axils of the lower half of the buckwheat. The eggs remain attached and dormant until the rainy season, at which time new growth of buckwheat appears, the eggs hatch and the larvae crawl to the base of the plant where

they overwinter and feed on new foliage (Arnold 1983b). The larvae are nocturnal feeders and feed on new plant growth through the winter and spring. Pupation occurs in midsummer in the litter at the base of the buckwheat (Service 1984).

Threats

The primary limiting factors for the Lange's are availability of nectar sources for adults, adequate host plants for egg-laying, and sufficient food for larvae (Service 1984). The highest density of buckwheat on the Refuge can be found in open areas, where the nonnative ripgut brome (*Bromus diandrus*), vetch (*Vicia villosa*) and the yellow star-thistle (*Centaurea solstitalis*) can be found. Invasion by nonnative weeds is detrimental to the Lange's because it reduces the amount of suitable buckwheat stands available for habitat and exacerbates fire frequency and intensity conditions. Modification of the microclimate at the base of the buckwheat plant, which is also affected by nonnative weed encroachment, seems to reduce the viability of the larvae (Arnold and Powell 1983). Moreover, additional losses of buckwheat are caused by past disking for fuelbreaks and by wildfires.

3.1 Antioch Dunes evening primrose

Description

Antioch Dunes evening primrose ("primrose") is a short-lived perennial plant in the evening-primrose family (Onagraceae). It forms large tufts with coarse drooping stems 15 to 30 inches long, and branched throughout. Leaves are lance-like, 1 to 5 inches long, and grayish with numerous hairs. Flowers are white fading to pink, sepals 0.3 to 1.3 inches long, petals 0.8 to 1.6 inches long. Stamens are yellow. The primrose blooms from March through September.

Distribution

The primrose is endemic to Antioch dunes, and its naturally occurring population is confined to two disjunct units of the Refuge; the PG&E parcels and a portion of the Kemwater property. The subspecies has also been grown at the East Bay Regional parks Botanic Garden at Tilden Regional Park in Berkeley since 1970, and has been introduced to Brannan Island SRA, Point Reyes National Seashore, and Brown's Island in the Delta. Of these sites, the primrose persists only at Tilden Regional Park and Brannan Island.

Population Dynamics

From 1984 to 1991, the total primrose population was estimated to range from 4,300 to 5,800 individuals. During this time, total primrose counts on the Refuge's Stamm Unit were conducted every other year. In 1992, the Service observed a dramatic decline to 1,200 individuals and began outplanting primrose seedlings. Since then, a complete count of primrose has been conducted every year. In 1997, the primrose population reached a low of 455 individuals. This marked the eleventh year of general decline in the number of primrose at the Refuge since 1986. In 1998, the primrose populations increased to 785 individuals, and the downward trend had ended. Primrose plantings in

December 1997 were probably a bigger factor in this increase than natural reproduction. The steady decline of noncultivated primrose continues today.

Habitat

The primrose was historically restricted to sand dunes near the confluence of the Sacramento and San Joaquin Rivers. These dunes are characterized by an open, primarily herbaceous community with a scattering of low shrubs and coast live oak (*Quercus agrifolia*). These dunes were deposited by winds reworking glacial outwash from the Pleistocene Sierra Nevada. Most of the suitable habitat for this species is now part of the Antioch Dunes National Wildlife Refuge.

Threats

Because the primrose prefers disturbed sites with nearly pure sand, it is vulnerable to nonnative weed encroachment, the largest problem affecting the primrose. Greene (1995) found no primrose seedlings around mature primrose that were surrounded by nonnative weeds, yet seedlings were found near approximately forty percent of mature primrose that were not surrounded by weeds. Greene determined that nonnative weeds compete with primrose seedlings for water and light, resulting in reduced seedling germination and survival. Greene also determined that removing nonnative weeds around adult primrose enhanced germination rates. Weeds also have a negative impact on seedling germination success because they stabilize the dunes. Primrose seedlings germinated more readily in sand when the sand was disturbed and turned over.

Although substrate makeup has not been found to be critical for seedlings to germinate, it has been found that primrose only reach reproductive maturity on sandy soils. Other factors, such as weather and predispersal seed predation, contribute to lowered seed production.

3.2 Contra Costa wallflower

Description

The wallflower is an erect, course-stemmed biennial herb in the mustard family (Brassicaceae). Plants grow from a somewhat woody trunk-like base which typically elongates into multiple branched stems to 32 inches tall. The elongated woody base distinguishes this subspecies from other related subspecies of *Erysimum capitatum*. The lower leaves are lance-like to linear, up to 6 inches long and nearly 0.5 inches wide with minute teeth. Flowers are yellow with four-petals. Plants bloom from March to July of their second year. Flowers are born laterally on unbranched stems at the top of the plant. The petals have slender stalks and are approximately 0.5 to 1 inch long. Fruits are slender and pod-like, approximately 4 inches long.

Distribution

The Wallflower is endemic to Antioch Dunes and was listed as endangered in 1978. The entire known wild population of the wallflower exists at the Refuge and adjacent to

PG&E and Kemwater lands. Although current populations of wallflower at the Refuge seem to be concentrated on steep, north-facing slopes by the river, wallflower at one time grew on flat terrain in an excavated area within the dunes on the Kemwater property. Today, there are individual plants growing 160 to 660 feet away from the river bank in a flat, hard pan area of the Refuge. In these areas, the hard pan has been broken and the loose, sandy soil below has been exposed. A large stand of wallflower is atop and over a ledge leading down to the San Joaquin River. Although their population is now self-sustaining, overall, the wallflower appears to be more physically restricted within the dunes than the primrose.

Population Dynamics

In 1999, the wallflower population peaked at 11,567 individuals, the greatest number of wallflowers ever counted on the Refuge. It is possible that the increase in the number of mature plants was due to the influence of El Nino during the winter of 1997-1998. Population survey results indicate that the total number of mature plants is highly variable year to year. Because wallflower is a biennial species, it would be expected to track yearly variation in weather and other environmental parameters much more closely than longer-lived species.

Habitat

The wallflower was historically restricted to sand dunes near the confluence of the Sacramento and San Joaquin Rivers. These dunes are characterized by an open, primarily herbaceous community with a scattering of low shrubs and coast live oak. These dunes were deposited by winds reworking glacial outwash from the Pleistocene Sierra Nevada. Most of the suitable habitat for this species is now part of the Antioch Dunes National Wildlife Refuge.

Threats

Major threats to the wallflower include loss of dune habitat and competition from nonnative weeds such as yellow star-thistle and ripgut brome. Large-scale sand mining and industrial development have severely reduced the amount of suitable dune habitat for the species. Nonnative weeds have been observed to lead to lower germination and seedling survival rates.

4. DESCRIPTION OF COVERED AREA

The two PG&E 6-acre parcels covered by the Agreement and the Section 10(a)(1)(A) enhancement of survival permit ("Permit") are located along the south shore of the San Joaquin River in Contra Costa County, California in an area that was once part of an expanse of riverine sand dunes (See **Exhibit A**.). The two parcels are located adjacent to, and on either side of, the 14-acre Sardis Unit of the Antioch Dunes National Wildlife Refuge ("Refuge"). This property is considered the "enrolled property" as defined in the Service's final Safe Harbor Policy.

The Service is the record owner of the Sardis Unit as well as the Stamm Unit, located about half a mile to the west of the enrolled property. The PG&E parcels are bordered to the north by the San Joaquin River and to the south by Wilbur Avenue. The Georgia-Pacific gypsum plant and the Kemwater North American Company are adjacent to the PG&E parcels to the west and the east, respectively.

PG&E's parcels, along with the Refuge land, exist as isolated habitat surrounded by industrial development. PG&E's parcels contain approximately 1 acre of riparian habitat and approximately 11 acres of interior dunes, a unique habitat classified as high priority by the California Department of Fish and Game. Two PG&E transmission towers are located on Antioch Dunes – one 115 kV tower on the west parcel and one 230 kV tower on the east parcel. PG&E relies on graveled and dirt access roads to reach all of its facilities on Antioch Dunes. Each tower has an established work area that is utilized for maintenance and operation activities.

5. PROJECT DESCRIPTION

5.1 Weed Eradication

PG&E will conduct weed eradication activities on the enrolled parcels. Such eradication techniques employed by PG&E may involve the use of herbicides to be applied around buckwheat, primrose and wallflower. The Service will provide PG&E with a list of chemicals that are safe to use around buckwheat that are not harmful to Lange's metalmark butterflies.

The Service has determined that tree of heaven, in particular, poses a significant threat to the Covered Species within the enrolled property and on adjacent Refuge lands. PG&E will fund the eradication, to the best extent possible, of all tree of heaven plants from the enrolled property. Treatment will include use of herbicides sprayed on the tree of heaven. Follow-up visits will be utilized to remove tree of heaven by hand after herbicide use and determine if further action is required.

Other weed eradication techniques may include manual removal using volunteer efforts. PG&E will organize two volunteer workdays per year (March/May and May/July) utilizing approximately twenty volunteers each session. The volunteers will hand pull and mechanically remove weeds including, but not limited to: winter vetch, rip gut brome, and yellow star thistle. Working with USFWS, PG&E will develop a specific list of target weed species for eradication including tree of heaven, star thistle, vetch and rip-gut brome. PG&E will identify a volunteer team leader to interface with the Refuge and to provide instructions to the volunteer group. To the extent possible, the team leader will remain constant through time. This individual would receive special training from Refuge personnel on covered species and be added to the Refuge's Section 10 Permit. To the extent possible PG&E will identify a permanent volunteer team leader. It is anticipated that the volunteer team will remove a few hundred square feet of invasive weeds per session. The volunteer teams will make a good faith effort to achieve this

goal. The Service recognizes that it may not be possible to achieve this goal during every session.

PG&E will be responsible for reducing the percent cover and composition of non-native invasive weed species. The baseline from which they will operate will be that cover of non-native plant species already present on the enrolled parcels.

The Service will be responsible for restoration of endangered and native plants to the enrolled parcels. The Service will enhance areas located away from the PG&E towers by scraping and planting or seeding wallflower, primrose and buckwheat. Other natives may be planted or seeded into the sites as well. The Refuge and PG&E have entered into a Cooperative Agreement which details the management, use, and protection of lands owned by PG&E and the Service at Antioch Dunes.

The majority of native plant restoration activities will occur in areas away from the PG&E towers such that when it is necessary for PG&E to conduct maintenance on the towers, the overall damage to the habitat and probable take of endangered species will be minimized.

5.2 Description of Monitoring Provisions

PG&E will monitor the enrolled property every other year for the duration of this Agreement. Monitoring data will be collected during the month of April in all even-numbered years (weather permitting). Monitoring will consist of the collection of vegetation data within fifty circular plots, each with a diameter of 48 feet. Twenty-five plots will be randomly established on each of the west and east parcels. These monitoring provisions are described in detail in the summary entitled "Antioch Dunes Safe Harbor Agreement Baseline Monitoring Protocol" attached hereto as **Exhibit B** and incorporated herein by reference. Monitoring using this methodology will not only provide information on the success of weed eradication, but will also assist the refuge in early detection of new invasive plant species.

5.3 Description of Reporting Provisions

A monitoring report will be prepared and submitted to the Service for each sampling year that this Agreement remains in effect. The report will be submitted by December 31of each sampling year. Elements of the Monitoring Report are described in detail in **Exhibit B**. If both PG&E and the Service agree to terminate this Agreement, a final report will be submitted within 90 days of permit termination.

5.4 Covered Activities

Covered activities under this Agreement include any otherwise lawful activities within the enrolled property that have been restored or enhanced pursuant to this Agreement. Covered activities shall include incidental take of the Lange's metalmark butterfly and other special-status species that could occur as a result of a variety of routine PG&E activities. For example, PG&E's normal utility operations and property management activities on Antioch Dunes include, but are not limited to, the following:

- Continue to access to transmission towers, when necessary, by existing dirt access roads and work pads at the base of each tower either on foot or by pickup truck;

- Conducting ground patrols of transmission lines and associated facilities using either light trucks or all-terrain vehicles on existing access roads;

- Conducting inspections by helicopter;

- Inspecting tower footings and poles to verify stability, structural integrity, and equipment condition;

- Washing of electrical insulators to prevent faulting using distilled water or ground corn cobs;

- Conducting outage repair activities to maintain public safety as required by the CPUC; including emergency tower & pole repair, including shoo-fly (temporary line);

- Accessing towers to reconductor electrical lines, and modifying structures;

- Replacing, repairing or upgrading electrical system; and

- Replacing, repairing or upgrading electrical system poles and equipment (e.g., cross arms, insulators, pins, transformers, wires, cables, guys, anchors, switches, fuses, or paint).

- Tower Painting and Cleaning; Removal of old paint is normally accomplished through abrasive blasting. To reduce impacts from the abrasive blasting, scaffolding will be erected around tower sections and it will be wrapped with heat shrink wrap to reduce the distance from the tower that sand and paint particles will fall. In addition, a platform constructed of plywood covered with tarps will be placed at the base of the towers Tower Painting and Cleaning; Tower cleaning activities will be limited to periods when the probability of high winds on the subject parcels is low. This may require that a given tower be cleaned and painted over a period of several years rather than during a single year.

- Installation and maintenance of a radar activated FAA lighting system mounted on the ground and on both PG&E transmission towers including an electric distribution service line (overhead or underground) to each tower from the existing electric distribution pole line located along the northerly right of way of Wilbur Avenue.

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In addition, if the Lange's metalmark butterfly population expands during the term of this Agreement or if there are significant range adjustments, incidental take of adults or larvae may be more likely to occur during routine activities in sensitive areas. If PG&E proposes to undertake any actions that fall outside the scope of habitat management and

enhancement or its normal utility operations and property management activities, and if PG&E reasonably expects that activities will result in the incidental take of any covered species (including any weed eradication activities undertaken to return the property to baseline conditions) PG&E shall give the Service at least 30 days advance notice thereof and PG&E and the Service will work cooperatively to minimize negative impacts to the covered species from any such actions.

5.5 Avoidance and Minimization Measures

- PG&E will conduct environmental tailboard trainings on an as-needed basis in the field. The environmental tailboard trainings will include a brief review of the biology of the covered species and guidelines that must be followed by all personnel to reduce or avoid negative effects to sensitive species during operations and maintenance activities.

- Lines will be constructed to conform to the latest revision of PG&E's Avian Protection Plan.

- Lange's metalmark butterfly/Buckwheat Plants in Antioch Dunes DWR

    a. Conduct work during dry conditions

    b. Use existing paved and dirt roads within suitable habitat or follow biological monitor approved travel routes. A qualified biological monitor will be present when work needs to be conducted within the enrolled properties or Refuge lands (except inspections).

    c. Avoid or minimize impacts to naked-stem buckwheat (*Eriogonum nudum auriculatum*).

    d. Avoid work in suitable habitat during the flight and mating season (August and September).

    e. Cut trees that are removed in the vicinity of buckwheat will be hand carried rather than dragged to disposal areas.

5.6 Funding Provisions

PG&E owns the enrolled property and is committed to implementing the provisions of the Agreement and Permit. Implementation of this Agreement is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized agency official affirmatively acts to commit to such expenditures as evidenced in writing.

6. DESCRIPTION OF BASELINE CONDITIONS

6.1 Setting Baseline Levels

The Service's Final Safe Harbor Policy requires a complete description of baseline conditions for all covered species identified in this Agreement [*Federal Register* 64:32717 (June 17, 1999)]. Baseline levels can be described by population estimates, locations of individual animals, the amount of habitat available, or by site characteristics that contribute to occupancy. Often baseline levels are described in terms of the amount and condition of available habitat (and not in terms of population census) because the number of individuals present in a given area is expected to fluctuate over time. PG&E will set baseline levels primarily based on site characteristics and not on population census measurements. Baseline conditions are only set at zero when there is no seasonal or permanent occupation by the covered species.

In consultation with the Service, PG&E has agreed to describe the baseline level on the enrolled property in terms of the amount of invasive plant material present. Through the efforts of both the Service and PG&E, a reduction in the amount of invasive plant material present on the site should occur over time. A reduction in the amount of invasive plant material will provide additional habitat for the buckwheat, primrose and wallflower.

PG&E's normal utility maintenance and property management activities on the enrolled property are unlikely to cause an increase in the amount of invasive plant material present above baseline conditions. Many of PG&E's routine maintenance procedures or temporary ground-disturbing activities have the potential to reduce invasive plant cover over the long term, thereby enhancing habitat for the buckwheat, primrose and wallflower. Should the baseline conditions for invasive plants rise above the baseline level, PG&E will re-evaluate its activities on the enrolled property and will contact the Service to consult and determine an appropriate course of action.

6.2 Baseline for Covered Species

PG&E proposes to establish the baseline level for the enrolled property based on invasive plant species known to occur on the site. For the purposes of this Agreement, invasive plants species are defined as any plant species not native to the California interior dune plant association. Baseline aerial cover values were established for all invasive plant species recorded on the enrolled property during surveys conducted in April 2008 following the protocol described in **Exhibit B**. The total aerial cover value for all invasive plant species measured during the April 2008 surveys was 81.8 percent. To meet the requirements of this Agreement, the total aerial cover value measured during future monitoring surveys for all invasive plant species will be maintained at less than 81.8 percent. The Service and PG&E anticipate that this will be accomplished through efforts to eradicate tree of heaven through application of herbicides, as well as volunteer teams that will attempt to remove up to a few hundred square feet of invasive plants during each visit.

7. NET CONSERVATION BENEFIT

PG&E intends to restore, enhance, and safeguard the native dune habitat which occurs naturally on the Antioch Dunes by implementing specific conservation measures. These measures are reasonably expected to be beneficial for the conservation of several regional and locally occurring special-status interior dune endemic species. PG&E intends to further this goal by implementing the management activities described in **Section 5.1**.

The conservation measures are reasonably expected to result in the following Net Conservation Benefits to the covered wildlife species:

- Increased availability of suitable breeding and foraging habitat through control of invasive plant species;

- Greater likelihood of increased population sizes of the Lange's metalmark butterfly in the general area away from the towers;

- Minimization of the potential for Lange's metalmark butterfly extirpation in the general area;

- Increased availability of suitable habitat for Antioch Dunes evening primrose and Contra Costa wallflower.

The Service has determined that PG&E's conservation measures, as described in this Agreement, will be reasonably expected to provide the net conservation benefits listed above for the Lange's metalmark butterfly. The Service has also determined that the duration of the Agreement and associated Permit will be reasonably expected to be sufficient to achieve these net conservation benefits.

8. OTHER LAND OWNERS WHO MAY SECURE INCIDENTAL TAKE AUTHORIZATION

It is acknowledged that other neighboring landowners currently may be undertaking conservation management activities on Antioch Dunes in accordance with other permits or authorizations. Other landowners are not Parties to this Agreement or the Permit associated with this Agreement. If PG&E's voluntary conservation measures result in new or expanded occupation of adjacent properties by the covered species, the Service will use the maximum flexibility allowed under the Act to address neighboring properties under the Agreement and the associated Permit, or such other authorization that otherwise governs the neighboring landowner's activities. Moreover, the implications to neighboring landowners and the potential need to actively address these implications will be determined on a case-by-case basis. In general, the Service will endeavor to include neighboring landowners whose activities may affect listed species as a Party to this or to a separate Agreement and permit.

9. RESPONSIBILITIES OF THE PARTIES

9.1 Landowner Responsibilities

Subject to the express terms and conditions of this Agreement (including without limitation this Section 9.1), PG&E agrees to implement the provisions of this Agreement, to adhere to the terms and conditions of the Permit, and to provide sufficient funding and other resources necessary to implement the Agreement during the term of this Agreement. With reasonable advance notice, PG&E shall allow Service personnel, or other properly permitted and qualified persons designated by the Service, to enter the enrolled property at reasonable hours and times to inspect the enrolled property to insure compliance with this Agreement and to conduct restoration activities. The Service will notify PG&E of its need to enter the enrolled property.

Notwithstanding anything contained in this Agreement, the Service and PG&E acknowledge and agree that any third party use, outside the use of volunteer groups, of PG&E's property related to or otherwise arising out of the implementation of the terms and provisions of this Agreement shall be subject to (i) a separate written agreement between PG&E and such third party in form and substance satisfactory to PG&E in its sole and absolute discretion and (ii) prior receipt of final, unappealable and unconditional approval from the California Public Utilities Commission ("CPUC") if such approval is deemed necessary or desirable as determined by PG&E in its sole and absolute discretion. Without limiting the generality of the foregoing, the Service and PG&E further agree that the foregoing conditions are applicable to any third party use, outside the use of volunteer groups, agreed to or permitted on the enrolled property under this Agreement.

9.2 Service Responsibilities

The Service will endeavor to provide technical assistance for PG&E weed eradication activities, if requested and available, to PG&E to assist with implementation of the Agreement. The Service will ensure that PG&E implements the Agreement properly.

9.3 Shared Responsibilities of the Parties

The Parties will ensure that the Agreement and the actions covered in the Agreement are consistent with applicable Federal, State, and Tribal laws and regulations. The Parties will ensure that the terms of the Agreement will not be in conflict with any ongoing conservation or recovery programs for the covered species. Nothing in this Agreement will be construed to limit or constrain any Party or any other entity from taking additional actions at its own expense to protect or conserve the covered species. Nothing in this Agreement will limit the ability of Federal and State conservation authorities to perform their lawful duties, and conduct investigations as authorized by statute and by court guidance and direction. Each party will have all remedies otherwise available to enforce the terms of the Agreement and the Permit, except that no Party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement, or any other cause of action arising from this

Agreement. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

10. LAND OWNER ASSURANCES

Through this Agreement, the Service provides PG&E assurances that it may use, alter, or modify the enrolled property, even if such use, alteration, or modification results in the incidental take of the covered species. PG&E is also provided assurances that they can return the enrolled properties to baseline conditions by allowing the amount of invasive weed species to return to the originally agreed upon invasive weed baseline conditions. Specifically, the Service provides PG&E assurances that such use, alteration, or modification activities may include, but are not limited to, those activities identified in Section 5.1 and 5.3 These assurances depend on PG&E complying with the obligations in this Agreement and in the Permit. Further, such assurances apply only to this Agreement, only if the Agreement is being properly implemented, and only with respect to species covered by the Agreement and Permit. The Service has determined that the incidental take of covered species authorized by this Agreement and its accompanying permit will not appreciably reduce the likelihood of survival and recovery in the wild of the covered species.

11. AGREEMENT/PERMIT MANAGEMENT

11.1 Agreement/Permit Duration

The parties acknowledge and agree that PG&E currently is preparing a Habitat Conservation Plan ("HCP") for operations and maintenance activities conducted in PG&E's Bay Area service territory ("Bay Area HCP"). The HCP will serve as the biological framework to obtain a 50-year Section 10 (a)(1)(B) Incidental Take Permit. This Safe Harbor Agreement will remain in effect for five years. PG&E will have the option to include Antioch Dunes in PG&E's Bay Area HCP after it has been approved by the Service.

11.2 Agreement/Permit Termination

PG&E can terminate this Agreement at any time, for any reason or no reason by providing the Service with 30 days written notice. However, PG&E acknowledges that early termination of the Agreement will result in a corresponding termination of the Permit and PG&E's loss of the regulatory assurances provided by the Permit for the covered species. PG&E may, however, prior to terminating the Agreement, discontinue invasive weed eradication activities, thus allowing the enrolled property to return to invasive weed baseline conditions.

11.3 Agreement Renewal and Permit Extension

The Agreement can be renewed with or without modification with the approval of all Parties. If the Agreement is renewed, the corresponding Permit duration will be extended beyond the duration of the Agreement. The duration of the renewed Agreement and Permit will be agreed upon by the Parties.

11.4 Transfer of Agreement/Permit Benefits

By signature of this Agreement, PG&E agrees to notify the Service in writing and at least 30 days in advance if all or a portion of its interest in the enrolled property is to be transferred to another owner. If PG&E transfers its interest in all or part of the enrolled property, the Service will regard the transferee as having the same rights and obligations as PG&E under this Agreement, if the transferee agrees to become a party to the original Agreement. Actions taken by the transferee that result in the take of covered species would be authorized if the transferee maintains the terms and conditions of the original Agreement and the Permit. If the transferee does not become a Party to the Agreement, it would neither incur responsibilities under the Agreement nor receive any assurances relative to the Act's section 9 prohibitions that might result from the transferee's actions. After any notification of a transfer of interest in the enrolled property, the Service will contact the proposed transferee to explain the original Agreement and to determine whether the transferee desires to become a Party to the original Agreement or enter into a new safe harbor agreement. Notwithstanding anything contained in this Agreement, this Agreement is not intended to run with the land and any transferee or successor owner of the enrolled property or an interest therein shall not be obligated to be a party to the original Agreement or any other agreement with the Service. In the event a transferee becomes a Party to the original Agreement, the Service will honor the terms and conditions of the original Agreement and Permit, provided that the Service determines that there would continue to be a net conservation benefit for the covered species.

12. MODIFICATIONS OR AMENDMENTS

12.1 Modification or Amendment of the Agreement

Either Party may propose amendments to this Agreement, as provided in 50 CFR 13.23, by providing written notice to, and obtaining the written concurrence of, the other Party. Such notice shall include a statement of the proposed modification, the reason for it, and its expected results. The Parties will use their best efforts to respond to proposed modifications within 60 days of receipt of such notice. Proposed modifications or amendments will become effective upon the other Parties' written concurrence.

12.2 Termination of the Agreement

As provided for in Part 12 of the Service's Safe Harbor Policy (FR 64:32717), PG&E may terminate the Agreement for circumstances beyond their control by giving written notice to the Service. In such circumstances, PG&E may return the Enrolled Property to

baseline conditions even if the management activities identified in the Agreement have not been fully implemented.

12.3 Permit Suspension or Revocation

The Service may suspend or revoke the permit for a reasonable cause, in accordance with the laws and regulations in force at the time of such suspension or revocation. PG&E has the right to appeal any suspension or revocation to a mutually agreed upon arbitrator.

12.4 Baseline Adjustment

The baseline conditions for the Enrolled Property may, by mutual agreement of the Parties, be adjusted if, during the term of the Agreement for reasons beyond the control of PG&E, the amount of invasive weeds is increased above what it was at the time the Agreement is signed.

12.5 Adaptive Management

Adaptive management allows for mutually agreed-to changes to the management activities in response to changing conditions or new information. This approach will be utilized if needed to assure that the project will provide a net conservation benefit for the Covered Species for the duration of the Agreement. Decisions related to adaptive management will be based on the monitoring results and other information in annual reports.

13. OTHER MEASURES

13.1 Remedies

Each party shall have all remedies otherwise available to enforce the terms of the Agreement and the permit, except that no party shall be liable in damages for any breach of this Agreement, any performance or failure to perform an obligation under this Agreement or any other cause of action arising from this Agreement.

13.2 Dispute Resolution

The Parties recognize that disputes concerning implementation of, compliance with, or termination of, this Agreement may arise from time to time. The Parties agree to work together in good faith to resolve any disputes, using dispute resolution procedures agreed upon by all Parties.

13.3 Availability of Funds

Implementation of this Agreement by the Service is subject to the requirements of the Anti-Deficiency Act and the availability of appropriated funds. Nothing in this Agreement will be construed by the Parties to require the obligation, appropriation, or expenditure of any funds from the U.S. Treasury. The Parties acknowledge that the

Service will not be required under this Agreement to expend any Federal agency's appropriated funds unless and until an authorized official of that agency affirmatively acts to commit to such expenditures as evidenced in writing.

13.4 No Third-Party Beneficiaries

This Agreement does not create any new right or interest in any member of the public as a third-party beneficiary, nor shall it authorize anyone not a party to this Agreement to maintain a suit for personal injuries or damages pursuant to the provisions of this Agreement. The duties, obligations, and responsibilities of the Parties to this Agreement with respect to third parties shall remain as imposed under existing law.

13.5 Other Listed Species, Candidate Species, and Species of Concern

The possibility exists that other listed, proposed, or candidate species, or species of concern may occur in the future on the enrolled property as a direct result of the management actions specified in this Agreement. If that occurs and PG&E so requests, the Parties may agree to amend the Agreement and associated permit to cover additional species and to establish appropriate baseline conditions for such other species.

13.6 Notice and Reports

Any notices and reports, including monitoring and annual reports, required by this Agreement shall be delivered to the persons listed below, as appropriate:

Safe Harbor Program Coordinator
Conservation Partnerships Division
Sacramento Fish and Wildlife Office
2800 Cottage Way, Room W-2605
Sacramento, CA 95825

Refuge Manager
U.S. Fish and Wildlife Service
San Pablo Bay NWR, Marin Islands & Antioch Dunes
7715 Lakeville Highway
Petaluma, CA 94954

13.7 Emergency Situations

Emergency situations, such as wildfires, epidemic disease, or other factors, may require utility or property management actions not specified in this Agreement. In these situations, the Parties acknowledge that it may be impossible to provide the 30-day advance notice required by the Agreement prior to initiating activities that could result in the take of covered species. However, PG&E will notify the Service as soon as reasonably possible after discovering such a situation, and will make reasonable accommodations to the Service prior to the emergency management actions. The Parties acknowledge that relocation efforts of affected covered species may be precluded by

certain emergency situations. PG&E and the Service will work cooperatively to avoid impacts to covered species resulting from an emergency situation.

14. SIGNATURES

By our signatures below, each Party agrees to abide by and uphold the provisions of this Agreement and any conditions of the Permit associated with this Agreement.

Date:_____ _____

_____

_____

_____

Date:_____ _____

_____

_____

_____

15. REFERENCES

Arnold, R.A. 1983a. Monitoring of the endangered Lange's metalmark butterfly in 1983 at Antioch Dunes. Report for the San Francisco Bay Wildlife Refuge. U.S Fish and Wildlife Service Contract No. 10181-9726.

Arnold, R.A. 1983b. Ecological studies of six endangered butterflies (Lepidoptera: Lycaenidae): Island biogeography, patch dynamics and design of habitat preserves. University of California Publications in Entomology 99: 1-161.

Arnold, R.A. and J.A. Powell. 1983. *Apodemia mormo langei*. Pages 98-128 *in* R.A. Arnold (editor). Ecological studies of endangered butterflies (Leipidoptera: Lycaenidae): island biogeography, patch dynamics, and the design of habitat preserves. University of California Publications in Entomology 99.

Greene J.A. 1995. Three reproductive ecology studies in the narrow endemic *Oenothera deltoides* ssp. *howellii* (Onagraceae). Claremont Graduate School, M.A. Thesis.

Powell, J.A. and Parker M.W. 1993. Lange's metalmark, *Apodemia mormo langei* Comstock. From Conservation Biology of Lycaenidae. Edited by T.R New.

U.S. Fish and Wildlife Service. 1984. Recovery plan for three endangered species endemic to Antioch Dunes, CA.

U.S. Fish and Wildlife Service. 2002. Antioch Dunes National Wildlife Refuge Comprehensive Conservation Plan. USFWS, Sacramento, CA.

16. EXHIBITS

Exhibit A Map of Antioch Dunes, Contra Costa County, California

Exhibit B Antioch Dunes Safe Harbor Agreement Baseline Monitoring Protocol